

SENIOR CIVIL ENGINEER

JOB DESCRIPTION

Classification Responsibilities: Under general supervision, performs advanced responsible professional engineering work. This class performs related duties as required.

In the *Engineering Department*, the Senior Civil Engineer is responsible for designing and managing projects in the City's Capital Improvement Program (CIP) throughout the entire life of the project. Duties as project manager are comprehensive including responsibilities for such tasks as preparing design and bid documents, securing necessary permits and approvals, preparing cost estimates, tracking budgets, coordinating with other City departments, performing quality control and assurance, coordinating reviews by other City departments and outside agencies, communicating with the general public and elected officials, preparing reports and calculations, mentoring other staff, overseeing the bidding and Council award processes, and reviewing shop drawings. During the construction phase of a project, the Senior Civil Engineer is responsible for ensuring that the project is completed in accordance with the approval plans and specifications. Acts as the City's representative for the project performing tasks such as ensuring and verifying compliance with the bid documents, ensuring compliance with the obtained permits and approvals, preparing cost estimates, tracking budgets, coordinating with other City departments, coordinating with outside agencies, performing construction inspections, communicating with the public and with elected officials, preparing reports and calculations, mentoring other staff, reviewing shop drawings, verifying quantities, reviewing pay applications, and negotiating change orders. Work is performed under the general supervision of a Supervising Engineer who reviews work through conferences, reports, inspections, and results achieved.

In *Development Services*, a Senior Civil Engineer is responsible for reviewing and permitting private development projects to be built in the City of Mesa. Project review includes working in support of the Planning Department for projects that are proceeding through entitlement processes. Duties as project reviewer of civil plans are comprehensive, including responsibilities for such tasks as review of prepared design documents and reports for utilities main line extensions, service connections, street improvements, and storm water retention plans. Duties also include: coordination with other City departments on the design and construction of public facilities by developers. Individuals in this position have extensive public contact with developers, contractors, and owners regarding infrastructure improvement requirements. With a strong emphasis on customer service, this individual works to promote problem resolution and positive interaction between the City and the private development community.

In the *Water Resources Department*, Senior Civil Engineers are assigned to one of three areas: The *Capital Improvement Projects Assignment* oversees projects for the design and construction of the City's water and wastewater systems and serve as a City representative on these projects. Additionally, the Senior Civil Engineer in the Water Resources Department assists in the program planning and project development of utility-related projects in the City's five-year CIP. Some Senior Civil Engineers supervise a design or construction administration team comprised of one or more designers, technicians, inspectors, or surveyors. The *Asset Management Assignments* primary responsibility will be to manage the asset management program for water utility facilities and infrastructure such as wells, pump stations, reservoirs, valves, and pipelines. The *Hydraulic Modeling Assignments* primary duties are: keeping

the water system hydraulic model and Water and Wastewater Master Plan updated, reviewing development submittals for compliance with the Master Plan and system requirements, analyzing operational alternatives and preparing design concept reports for water system CIP projects. This position will also assist in the deployment of a maintenance management systems for water infrastructure.

Distinguishing Features: Employees in this class perform the full-range of professional engineering tasks. In addition, a Senior Civil Engineer directs and reviews the work performed by lower-level professional and paraprofessional engineers, technicians, inspectors, surveyors, etc. Assignments are broad in scope and require the use of independent judgment and initiative in making technical decisions of considerable difficulty. A Senior Civil Engineer may specialize in a particular field (example: storm drainage, sewer and water, roadways, special improvement districts, construction administration, etc.) and act as the City's technical expert in that field. Some employees may progress to this class by noncompetitive promotion upon meeting the specific criteria-based promotion requirements of performance and registration as a Professional (Civil) Engineer in the state of Arizona. This class is FLSA exempt-professional.

QUALIFICATIONS

Employee Values: All employees of the City of Mesa are expected to uphold and exhibit the City's shared employee values of Knowledge, Respect, and Integrity.

Minimum Qualifications Required. Registration as a Professional Civil Engineer.

Special Requirements. Must possess a valid Class D Arizona Driver's License by hire or promotion date (*by assignment*). Registration as a Professional Civil Engineer in the state of Arizona is required within six months of hire.

Substance Abuse Testing. Due to the safety and/or security sensitive nature of this classification, individuals shall be subject to pre-employment or pre-placement alcohol, drug and/or controlled substance testing as outlined in City policy and procedures (*by assignment*).

Preferred/Desirable Qualifications. Experience with computerized maintenance management programs; experience with condition and performance assessments for potable water system assets; and experience with cost/benefit analysis for optimized repair and replacement schedules for water system assets (*Asset Management Assignment*). Six months of supervisory experience preferred.

ESSENTIAL FUNCTIONS

One position may not include all of the essential functions, knowledge and abilities listed, nor do the listed examples include all the knowledge and abilities which may be found in positions of this classification.

Communication: Communicates with the general public, other City, state, and federal employees, vendors, management, contractors, and public officials in order to perform assigned work. Instructs and trains subordinates and informs the general public in a classroom setting regarding capital improvement projects or different programs such as flood plain management. Prepares letters, memos, specifications,

and reports with clearly organized thoughts using proper sentence structure, punctuation, and grammar to communicate technical and controversial issues.

Manual/Physical: Reviews the work products of others to ensure compliance with standard operating procedures, federal regulations such as the Environmental Protection Agency (EPA), Department of Transportation (DOT), or Corp of Engineers, and state regulations such as the Arizona Department of Transportation (ADOT), Arizona Department of Environmental Quality (ADEQ), and county and City regulations. Inspects, monitors, and evaluates work related information to determine compliance with prescribed operating and safety standards. Operates a City vehicle requiring a standard Class D Arizona Driver's License to travel to and from job sites (*by assignment*). Operates a variety of standard office equipment. Enters data or information into a personal computer (PC) in order to prepare reports, drawings, and perform calculations. Prepares bundles of plans, specifications, and reports for distribution and/or mailing to other City agencies and departments.

Mental: Plans, organizes, and directs project design, storm water, and bridge inspection programs. Supervises and evaluates drafting, design calculations, utility coordination, and program administration of subordinate personnel. Prioritizes own work and prioritizes and assigns work to personnel. Resolves procedural, operational, and other work-related problems that are design related by discussing the problem and finding alternatives. Coordinates work activities and program functions with other City departments, contractors, other cities, and other state and federal agencies. Develops design specific policies and procedures, and short- and long-term objectives regarding standards and design concepts. Conducts research and analyzes service and operations data, design standards, and regulations in order to perform assigned duties. Performs mathematical calculations, statistical computations, and financial and/or cost analysis. Assists in preparing the division budget and directly prepares cost estimates for specific projects. Comprehends and makes inferences from written material such as: memos, letters, plans, specifications, and standards to perform duties. Understands and/or interprets blueprints, schematic drawings, layouts, and other visual aids such as redesigning or models to perform design and design review. Estimates labor and material costs from blueprints. Learns job related material through on-the-job training, and in a classroom setting regarding design of a particular project, or new regulations regarding design.

Knowledge and Abilities: (*may vary by assignment*)

Knowledge of:

public works design, standards, materials, and construction;
the principles and practices of civil engineering, and the methods and techniques used in the design of public water, sanitary sewer, storm sewer, underground utility lines, retention basins, pump stations, water storage tank sites, and public street improvements;
federal, state, and local regulations and codes, and the engineering standards pertaining to the design of the projects assigned;
symbols and terminology used in engineering drawings; and
construction materials, methods, inspection techniques, and survey principles.

Ability to:

determine, upon receipt of a design project, the approach to be taken for completion, including what elements may be assigned to subordinate personnel;

direct the research and compilation of data necessary for the fulfillment of design objectives;
coordinate related work flow, both within the City organization and with outside agencies;
supervise an engineering design or construction team or other personnel by assigning work, selecting work methods, answering questions, and reviewing and approving design and other work performed by professional and paraprofessional team members for compliance to instructions given and for conformity to sound engineering principles;
assist team members in the resolution of design problems;
perform the more difficult design and field work;
review subdivision development construction plans by checking for such factors as proper sewer and water line slopes, sizes, and depths to ensure adequate flows and capacities, compliance with county Health Department requirements and standard civil engineering;
review development construction plans by checking for such factors as proper street and right-of way widths, alignment and grades of curbs, gutters, and pavement sections and compatibility with existing improvements within the adjacent areas already developed;
coordinate the design of City projects being designed by consulting engineers;
perform constructability review of various plans;
review outside design work for aspects identical or similar to those of work performed in-house;
provide general engineering advice to other City departments and to the general public;
prepare oral and written reports of a technical nature;
establish and maintain effective working relationships with City officials, other professionals, contractors, coworkers, and the general public;
determine adherence to civil specifications on a variety of construction jobs and communicate effectively and persuasively with contractors and developers in securing compliance with specifications, plans, and ordinances;
apply fractions, percentages, ratios and proportions, mensuration, logarithms, algebra, geometric constructions, and the essentials of trigonometry;
work quickly and accurately under pressure to meet deadlines for project completion or issuing an addendum;
write project special conditions and construction notes precisely so there is little possibility of misinterpretation by contractors;
read and interpret construction drawings;
compute quantities for cost estimates and/or payments to contractors;
conduct engineering research work;
review claim and/or time request from contractors for compliance with specifications, conformance to standards and reasonability of prices and time frames;
negotiate the claims and/or time request from contractor;
conduct pre-construction conferences and other meetings to obtain confirmation on problems;
evaluate new product submittals and plant inspections; and
serve on technical boards, ad hoc committees, and technical subcommittees.

The duties listed above are intended only as general illustrations of the various types of work that may be performed. Specific statements of duties not included does not exclude them from the position if the work is similar, related, or a logical assignment to the position. Job descriptions are subject to change by the City as the needs of the City and requirements of the job change.

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